PATENT ABSTRACTS OF JAPAN

(11)Publication number : **11-206960**
(43)Date of publication of application : **03.08.1999**

---

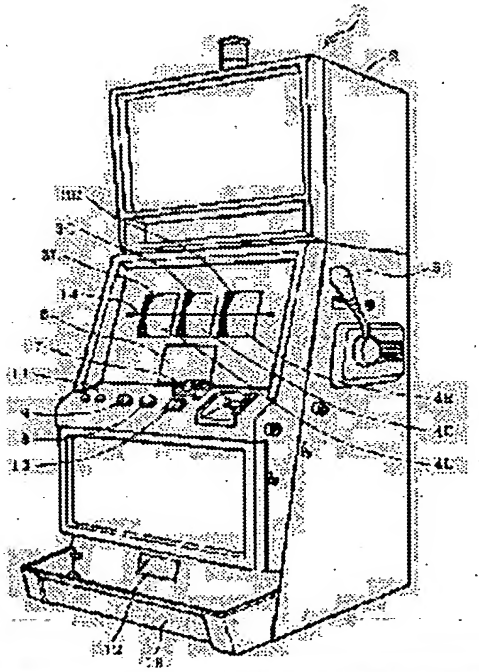
(51)Int.CI. A63F 5/04
A63F 5/04

---

(21)Application number : **10-019635**
(22)Date of filing : **30.01.1998**
(71)Applicant : **ARUZE CORP**
(72)Inventor : **OKADA KAZUO**

---

(54) GAME MACHINE



(57)Abstract:
PROBLEM TO BE SOLVED: To provide a game machine capable of eliminating monotonousness during the time of waiting for the results of a game played at variable display devices and providing another display easy to look at for a player watching variable displays by providing the player with some displays (another display) from the activation of variable display devices to display patterns necessary for games till its termination.
SOLUTION: In a game machine 1 provided with variable display devices 4L, 4c, and 4R to display a plurality of patterns necessary for games variably and a control means to control the variable displays, a display 6 capable of displaying any image is provided beneath the locations of the variable displays of the variable display devices 4L, 4C, and 4R. An image to be displayed on the display 6 is determined by the control means 6 or other control parts in relation with variable display control.

LEGAL STATUS

[Date of request for examination]	10.05.2002
[Date of sending the examiner's decision of rejection]	
[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]	

[Date of final disposal for application]

[Patent number]

[Date of registration]

[Number of appeal against examiner's decision of rejection]

[Date of requesting appeal against examiner's decision of rejection]

[Date of extinction of right]

Copyright (C); 1998,2003 Japan Patent Office

* NOTICES *
Japan Patent Office is not responsible for any damages caused by the use of this translation.
1. This document has been translated by computer.So the translation may not reflect the original precisely.
2. **** shows the word which can not be translated.
3.In the drawings, any words are not translated.

CLAIMS

[Claim(s)]
[Claim 1] Adjustable display which indicates two or more patterns required for a game by adjustable. Control means which control the adjustable display of this adjustable display. It is the game machine equipped with the above, and the display means which can display arbitrary pictures is provided, the picture displayed on this display means is determined in relation to the adjustable display control by the aforementioned control means, and the display position of this display means is characterized by being set to the adjustable display-position bottom of the aforementioned adjustable display.
[Claim 2] It is the game machine characterized by arranging the aforementioned display means under the display position of a specific change display means to control so that it has two or more change display meanses which carried out the parallel arrangement of the aforementioned adjustable display to the longitudinal direction in the game machine according to claim 1 and the aforementioned control means stop at the end.
[Claim 3] It is the game machine characterized by being the change display means which has arranged the aforementioned specific change display means in the center of the aforementioned adjustable display in a game machine according to claim 2.

[Translation done.]

* NOTICES *
Japan Patent Office is not responsible for any damages caused by the use of this translation.
1.This document has been translated by computer. So the translation may not reflect the original precisely.
2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[The technical field to which invention belongs] this invention relates to a slot machine and the game machine of a pachislot and others equipped with the adjustable display which indicates two or more patterns required for a game by adjustable, and control means, such as a microcomputer (henceforth a microcomputer) which controls this adjustable display.
[0002]
[Description of the Prior Art] For example, the game machine called a slot machine or a pachislot The adjustable display mechanically constituted from arranging two or more rotation reels which expressed two or more patterns in the front display window, Or it has the adjustable display electrically constituted from displaying the pattern on a reel on a screen. According to start operation of a game person, control means drive adjustable display and rotate each reel. Although profits are given to a game person by paying out game media, such as coin, when stopping rotation of each reel one by one by halt operation of a game person automatically after fixed time and the pattern of each reel which appeared in the display window becomes a specific combination (winning-a-prize pattern) That a winning-a-prize pattern gathers on the effective line of a display when the reel which is rotating in a model mainstream now stops is the case where winning a prize is won in internal processing of a game machine (when it specifically wins by the lottery by random number extraction with a microcomputer). This is for solving the problem that management of the rate of coin expenditure from a game machine etc. becomes difficult also for a game store while the result (victory or defeat) of a game will be decided, only a game person's skill will be emphasized and the soundness of a game will be spoiled by a game person's level of skill, if the pattern at the time of a halt is determined only by halt operation (timing) of a game person.
[0003] Although control which stops an adjustable display in the determination of the pattern displayed at the time of a halt of an adjustable display and such a pattern was performed by the microcomputer in such a game machine, for the game person, it was difficult to expect what the display mode at the time of a halt becomes, and it was only waiting for the result of a game to come out until it actually turned off the adjustable display. Then, the game machine which compensated the object insufficient of a game with performing a certain display other than such a game is proposed.
[0004] For example, when the game drop which is interlocked with generating of a predetermined hit state and operates is formed in JP,8-206328,A and a state occurs in this game drop, even if the great success state of a game machine is completed by hitting and making a game machine into a state, the reverberation can be enjoyed a certain time, and invention of increasing the probability of hit generating of a game machine is indicated.
[0005] Moreover, the subdisplay other than the main display which indicates two or more patterns

by adjustable is prepared in JP,8-10385,A, control which interrupts the setup time in which a game is possible without a coin injection is performed, and the slot machine which performs the game in a subdisplay is indicated.

[0006]

[Problem(s) to be Solved by the Invention] However, in the game machine indicated by above-mentioned JP,8-206328,A, time after the hit state of a game machine occurs until the state is completed, and a game machine do not change at all with the conventional thing about waiting until a result comes out from the start of a game, since the game drop formed independently is operated, and a game drop does not operate until the result of the game of the game machine itself comes out.

[0007] Moreover, there are not the former and a change at a point with the monotony of waiting until a result comes from the start of a game, since a subdisplay does not operate while the main display which the game in a subdisplay is performed into the service time produced after the usual game end also in the slot machine indicated by JP,8-10385,A, and performs the game of slot machine original is operating.

[0008] As mentioned above, according to the conventional game machine, even if it established the display means other than the adjustable display for a game, the game person was only looking at the pattern by which it is indicated by adjustable from the original game start before the end.

[0009] The purpose of this invention is to offer the game machine which can give another display legible for the game person who is observing the adjustable display while canceling monotony until it waits for the result of the game performed with adjustable display by giving a game person a certain display (another display) from the operation start of the adjustable display which displays a pattern required for a game before an end.

[0010]

[Means for Solving the Problem] In the game machine equipped with the adjustable display which indicates by adjustable two or more patterns which need the 1st mode of this invention for a game, and the control means which control the adjustable display of this adjustable display The display means which can display arbitrary pictures is provided, the picture displayed on this display means is determined in relation to the adjustable display control by control means, and the display position of this display means is characterized by being set to the adjustable display-position bottom of adjustable display.

[0011] As a display means, the mechanical display of rotation reel structure used on electric display, such as liquid crystal, and CRT, Light Emitting Diode, or the conventional slot machine can be used. A display image is distinguished and expressed with the various characters which can be expressed with such display, blink of a figure, an animation, or light, etc. As a kind of display image, there are the omen display of "great success", a promotion display which means promotion of "great success", a display which means "great success", a display which means "HAZURE", a display to which "great success" is made to expect, for example, it can store in the storage of a microcomputer beforehand as data.

[0012] In the 2nd mode, adjustable display has two or more change display meanses which carried out the parallel arrangement to the longitudinal direction, and a display means is arranged under the display position of the specific change display means controlled to stop at the end by control means.

[0013] In the 3rd mode, adjustable display is controlled so that the change display means arranged in the center stops at the end, and a display means is arranged under the display position of the change display means of the center.

[0014]

[Function and Effect] According to the 1st mode, at the time of a game, control means control the adjustable display of adjustable display. And with the pattern displayed at the time of a halt of an adjustable display, a game result is winning a prize or un-winning a prize (so-called "HAZURE"), and it appears. The adjustable display control by control means is controlling an adjustable display to determine the pattern which should be displayed corresponding to a game result at the time of a halt of an adjustable display, and to stop in the pattern. The picture determined in relation to this control is displayed on the display means established apart from adjustable display. Thereby, a game person can expect or expect the result of a game during the adjustable display by adjustable display.

[0015] The picture determined in relation to the above-mentioned adjustable display control is a display required in order to perform a display as shows the state of the control performed corresponding to the contents (kind of winning a prize, HAZURE, and winning a prize etc.) of the game result determined by control means, or the below-mentioned another game. The decision of such a display image is made by control means. Or when the display-control section as which the display means itself determines a display image according to the display command from control means is included, it is carried out in the display-control section.

[0016] As for a game person, it is desirable for an adjustable display and another display of adjustable display to go into a game person's field of view almost simultaneous in order also to have to observe the adjustable display of adjustable display, looking at another display by the display means. Since the display position of a display means is set to the adjustable display-position bottom of adjustable display, it can only move slightly the eye line which was looking at the adjustable display downward, and can see the display of a display means. Moreover, lower tends to attract a game person's attention, and since the movement of an eye line is also slight, a game person can also see an exception display easily, observing an adjustable display.

[0017] When adjustable display consists of change display meanses like two or more rotation reels which carried out the parallel arrangement to the longitudinal direction, and the change display means controlled to stop at the last among the change display meanses of these plurality stopped, a specific pattern displayed and it changes into the state (reach) become the display mode of winning a prize, a game person observes to the change display of a change display means stop at the end.

[0018] Since the display means is arranged under the specific change display means controlled to stop at the end according to the 2nd mode, it becomes easy to see the display of a display means, without a game person turning away his eyes from the change display of a change display means to observe. Furthermore, since the display image displayed goes into a game person's field of view easily, a game person can be made to recognize the relation or the correspondence relation with a halt result between a display image and adjustable display.

[0019] The inside of two or more change display meanses which carried out the parallel arrangement to the longitudinal direction which forms adjustable display according to the 3rd mode, Since the display means is arranged under a change display means by which are controlled so that a change display means by which it is located in the center stops at the end, and it is located in the center The display image located in the center though it obtained with a game person's eye lines and has swerved to right and left when the change display displayed one more specific pattern and it changes into the reach state used as the display mode of winning a prize goes into a game person's visual field easily; and tends to attract attention. Moreover, for a game person, it is legible that the display which should be observed is located in the center, and in order not to require movement of an excessive eye line, it leads also to fatigue reduction.

[0020]

[Embodiments of the Invention] Drawing 1 is the perspective diagram showing the appearance of the slot machine of one example of this invention. Although this slot machine 1 is a game machine which plays a game, using coin, a medal, or a token as a game medium, below, it is explained as what uses a medal.

[0021] Three display windows 3L, 3C, and 3R horizontally located in a line are formed in the transverse plane of the cabinet 2 which forms the whole slot machine 1, and various patterns are displayed on the winning-a-prize line 14 of the center of each display window, or the position of the upper and lower sides (refer to drawing 6). These patterns are drawn on the front face of the sheet which forms the periphery side of three rotation reels 4L, 4C, and 4R arranged inside a cabinet 2 corresponding to display windows 3L, 3C, and 3R. Adjustable display is constituted by these rotation reels. The start lever 5 for rotating the above-mentioned reel by operation of a game person is attached in the lateral portion of a cabinet 2 free [rotation] in the predetermined angle range. Moreover, in the center of a lower part of the display window of the transverse-plane section of a cabinet 2, the liquid crystal display 6 as an example of the display means in this invention is arranged. The display image is explained in detail later.

[0022] By push button operation of 8 or 1 spin switch for putting the aforementioned reel into operation by push button operation down the liquid crystal drive circuit 6 apart from operation of the medal input port 7 which puts in the medal of a game medium, and the above-mentioned start lever 5 Among the medals by which the credit is carried out, only one sheet The maximum BET switch 10 for betting the medal of the maximum number of sheets which can be risked on the game of 9 or 1 1-BET switch for risking on a game, and the C/P switch 11 which switches the credit/expenditure of the medal which the game person gained by push button operation are arranged. The medal receptacle section 13 grade which collects the medal paid out of the medal expenditure mouth 12 of the transverse-plane lower part by the change of the C/P switch 11 in the transverse-plane lower part of a cabinet 2 is arranged.

[0023] Drawing 2 shows the circuitry containing the control section which controls game processing operation in a slot machine 1, and the peripheral device (actuator) electrically connected to this.

[0024] In this case, control means make a microcomputer 20 a main component, add the circuit for a random number sampling to this, and are constituted. CPU21 which performs control action according to the program to which the microcomputer 20 was set beforehand, the clock pulse generating circuit 24 and counting-down circuit 25 which generate a criteria clock pulse in CPU21 including ROM22 and RAM23 which are a storage means, the random number generator 26 which generates the random number sampled, and the random number sampling circuit 27 are connected. In addition, as a means for a random number sampling, you may constitute so that a random number sampling may be performed within a microcomputer 20 (i.e., on the program of CPU21 of operation). In this case, it is also possible to be able to omit a random number generator 26 and the random number sampling circuit 27, or to leave as an object for backup of a random number sampling action.

[0025] Information and data required in order to perform processing which displays two or more display images of the after-mentioned besides game control of a slot machine on the screen of a liquid crystal display 6 are stored in ROM22 of a microcomputer 20.

[0026] In the circuit of drawing 2 , as main actuators with which operation is controlled by the control signal from a microcomputer 20 The stepping motors 15L, 15C, and 15R which carry out the rotation drive of the aforementioned reels 4L, 4C, and 4R, respectively, There are the hopper (the mechanical component for expenditure is included) 30 which contains the medal of a game medium, and the above-mentioned display screen, and it connects with the outgoing end of CPU21 through the motorised circuit 31, the hopper drive circuit 32, and the liquid crystal drive circuit 16, respectively. These drive circuits control operation of each actuator in response to control signals, such as drive instructions outputted from CPU21.

[0027] moreover, as main input signal generating meanses to generate an input signal required since a microcomputer 20 generates a control signal Medal sensor 7S which detect the medal thrown into medal input port 7, start switch 5S which detect operation of the start lever 5, a maximum of [the spin switch 8, the 1-BET switch 9, and] -- the reel position detector 34 which supplies the signal for detecting the position of each reel in response to the pulse signal from the reel rotation detector of the BET switch 10, the C/P switch 11, and adjustable display to CPU21 -- and When the number-of-sheets data with which the enumerated data of the medal detecting element 35 which detects the medal paid out of the hopper 30 was specified are reached, the completion signal circuit 36 of expenditure which supplies the signal for detecting the completion of medal expenditure to CPU21 is connected to the input edge of CPU21.

[0028] In the circuit of drawing 2 , a random number generator 26 generates the random number belonging to the predetermined numerical range, and a sampling circuit 27 samples one random number to suitable timing, after the start lever 5 is operated. In this way, the sampled random number will generate a "winning-a-prize request signal", if it is judged whether it belongs to the winning-a-prize field which is stored in the storage section in ROM22 and which was appointed beforehand and it belongs to the winning-a-prize field.

[0029] After rotation of Reels 4L, 4C, and 4R is started, counting of the number of the driving pulses supplied to each of stepping motors 15L, 15C, and 15R is carried out, and the enumerated data is written in the predetermined area of RAM23. A reset pulse is obtained from Reels 4L, 4C, and 4R for every one revolution, and these pulses are inputted into CPU21 through the reel position detector 35. CPU21 clears to "0" the driving pulse enumerated data stored in RAM23 by the reset pulse obtained in this way. Thereby, in RAM23, the enumerated data corresponding to the rotation position of one revolution within the limits is stored about each reels 4L, 4C, and 4R.

[0030] Since the rotation position and pattern of the above reels 4L, 4C, and 4R are matched, the pattern table is stored in ROM22. Furthermore, the winning-a-prize pattern combination table is stored in ROM22. On this winning-a-prize pattern combination table, the combination of the pattern which is winning a prize, the medal dividend number of sheets of winning a prize, and the winning-a-prize judging code showing the winning a prize are matched. A winning-a-prize pattern combination table is referred to, while controlling Reels 4L, 4C, and 4R, and when performing the winning-a-prize check after [all] a reel halt.

[0031] Moreover, below-mentioned "routine pattern" is displayed on a liquid crystal display 6 before generating of the above "a winning-a-prize request signal", and the data in which the criteria for choosing two or more display image data containing the program, and the routine pattern and the production pattern for performing processing which displays a "production pattern", and the picture which should be displayed out of these etc. are shown are stored in ROM22 after generating of a "winning-a-prize request signal."

[0032] Drawing 3 shows the procedure of operation which controls the display of a liquid crystal display 6. When CPU as the display-control section is given to the display means like a liquid crystal display 6 itself, you may make it the CPU determine a display image according to the display command (for example, display command corresponding to the kind or HAZURE of winning a prize) from CPU21 as game control means, although this processing is performed by CPU21 of the microcomputer 20 which is the game control means of a slot machine 1.

[0033] In drawing 3 , if the power supply of a game machine (slot machine 1) is turned on [it] first (step ST 1), CPU as control means will display a "routine pattern" on the screen of the display screen 6 (ST2). If a game person does predetermined operation here (i.e., if the start lever 5 or the spin switch 8 is operated after throwing a medal into medal input port 7 and operating the 1-BET switch 9 or the maximum BET switch 10), Reels 4L, 4C, and 4R will rotate, and an adjustable display will be started (ST3). At this time, it judges winning a prize / un-winning a prize based on the random number extracted by random number sampling (ST4). And it judges whether the "winning-a-prize request signal" occurred (ST5), and a display image is determined according to the judgment result. That is, if the "winning-a-prize request signal" has not occurred, a specific production pattern is chosen out of the production pattern group for "HAZURE" (ST6). When a "winning-a-prize request signal" occurs, it judges whether the "winning-a-prize request signal" corresponds to "great success" (ST7). If it is "NO", the production pattern for "per smallness" will be chosen out of the production pattern group of ** (ST8), and if it is "YES", the production pattern for "great success" "great success" of the specification out of the production pattern group of ** will be chosen (ST9). ["per smallness"] [specific] Here, each above-mentioned production pattern group (production pattern group the production pattern group of ** and for "per [HAZURE" / " / the production pattern group of ** and]" "great success") is formed by two or more production patterns, respectively, and is stored in ROM22. And the pattern chosen in this way is displayed on a liquid crystal display 6 (ST10), and about the reels 4L, 4C, and 4R under rotation, halt control according to the winning-a-prize request signal is performed (ST11), and it ends.

[0034] In the above-mentioned processing, the adjustable display of ST3 is realized, when CPU21 sends a driving signal to the motorised circuit 31, drives stepping motors 15L, 15C, and 15R and rotates Reels 4L, 4C, and 4R. Moreover, the winning-a-prize judging of ST4 is realized by judging to which group the value of the random number which sampled the random number and was extracted belongs on the aforementioned winning-a-prize probability table from a random number generator 26 to proper timing. And when judged with winning a prize, CPU21 sends the signal which carries out halt control of the reels 4L, 4C, and 4R to the motorised circuit 31 at the pattern display position corresponding to the kind of winning a prize. Thereby, halt control of ST11 is realized.

[0035] CPU21 performs simultaneously operation which sends the reel halt control signal based on the above-mentioned winning-a-prize judging to the motorised circuit 31, and operation which sends the pattern display signal based on selection of the "production pattern" which displays a screen on a liquid crystal display 6 to the liquid crystal drive circuit 16. Therefore, while halt control of the rotation reel is carried out, a production pattern is displayed on the screen of a liquid crystal display 6. A "production pattern" is explained in detail later.

[0036] When it judges with winning a prize, CPU21 supplies the medal expenditure command signal corresponding to the kind of winning a prize to the hopper drive circuit 32, and pays the medal of the predetermined number out of a hopper 30. Counting of the number of sheets of the medal which pays the medal detecting element 35 out of a hopper 30 in that case is carried out, and when the number-of-sheets data with which the enumerated data was specified are reached, the completion signal circuit 36 of expenditure pays out CPU21, and inputs a completion signal. Thereby, CPU21 stops the drive of a hopper 30 through the hopper drive circuit 32, and ends expenditure processing of a medal.

[0037] as mentioned above, on the slot machine 1 of an example CPU as control means judges generating of a "winning-a-prize request signal." While performing halt control of Reels 4L, 4C, and 4R so that the pattern of "HAZURE" may be located in a line, "great success" beforehand set to the winning-a-prize line according to the result or the pattern "per smallness" The display of a liquid crystal display 6 is controlled to display the production pattern with which a game person can expect generating of "great success", "per smallness", or "HAZURE."

[0038] On the other hand, when liquid-crystal-display 6 the very thing is equipped with CPU as the display-control section, CPU21 as game control means sends the instructions which a game person makes display the production pattern which can expect generating of "great success", "per smallness", or "HAZURE" on a liquid crystal display 6 to CPU of a liquid crystal display 6, when performing the above-mentioned reel halt control. According to this, CPU of a liquid crystal display 6 determines a display image, and displays it on a screen.

[0039] Next, an example is given and explained about the "routine pattern" and the "production pattern" which are displayed on the display screen of a liquid crystal display 6.

[0040] Drawing 4 shows the example of the display image of the display state in the display windows 3L, 3C, and 3R before Reels 4L, 4C, and 4R rotate, and a liquid crystal display 6. Here, the "title of a game" of an example of a routine pattern is displayed on the liquid crystal display 6. As other routine patterns, there is a display of "explanation of a game", "explanation in case reach occurs", etc., etc. When a routine pattern has two or more of these pictures, you may display one by one by the predetermined time interval.

[0041] Drawing 5 - drawing 8 show the example of the "production pattern" displayed on a liquid crystal display 6 one by one. In a liquid crystal display 6, "the cowboy over the horse" as shows drawing 5 appears at the same time Reels 4L, 4C, and 4R start rotation.

[0042] Here, the color of a background may be changed immediately after the rotation start of Reels 4L, 4C, and 4R, without erasing the routine pattern of a liquid crystal display 6, and production showing the start of a game may be carried out.

[0043] Moreover, you may make it display no pictures on a predetermined time until it starts the display of a production pattern to a liquid crystal display 6, and a liquid crystal display 6 after the rotation start of Reels 4L, 4C, and 4R. In this case, it is useful as production which heightens the feeling of tension which faces the start of a game.

[0044] Then, as shown in drawing 6 , rotation of the reels 4L and 4R on either side stops, and when it changes into the state (reach) where the winning-a-prize pattern (drawing 6 "WILD RODEO" pattern) of specification [the display in a display window] was equal to right and left, the display image of a liquid crystal display 6 becomes the display in the state "where a cowboy riots and it is fighting with the horse."

[0045] Then, as shown in drawing 7 , when a display when a central reel stops will not be a specific winning-a-prize pattern (put together), the display image of a liquid crystal display 6 will be in the state "where the cowboy was shaken off from the horse", and a game person will miss winning a prize.

[0046] On the other hand, as shown in drawing 8 , when a display when all the reels stop will be a specific winning-a-prize pattern (state to which three "WILD RODEO" patterns were equal in drawing 8), the display image of a liquid crystal display 6 becomes the display in the state "where a victorious pose is made from the state where the cowboy rode on the horse", and a game person gains the profits corresponding to the winning a prize.

[0047] By displaying the above-mentioned production pattern on the screen of a liquid crystal display 6 as an animation, a game person senses that a cowboy rioting and not being shaken off from a horse leads to winning a prize. Therefore, if the screen of a liquid crystal display 6 is seen, it wishes a cowboy rioting and not being shaken off from a horse and a cowboy is finally shaken off, a game person will sense that winning a prize was missed, until all reels stop. In this way, since a game person performs a game, doubling the production pattern which appears on the screen of a liquid crystal display 6, and the expectation for one's game result, and becoming it tense, the monotony of the conventional game is canceled.

[0048] Moreover, as shown in drawing 4 - drawing 8 , the liquid crystal display 6 is formed in the bottom of central reel 4C. Therefore, as shown in drawing 6 , rotation of the reels 4L and 4R on either side stops. After being in the state (reach) where the "WILD RODEO" pattern which is a winning-a-prize pattern of specification [the display in a display window / right and left] gathered, a game person Since the halt pattern on either side is already recognized, the display image of the liquid crystal display 6 in the bottom of it can be seen simultaneously that what is necessary is to observe only the display of reel 4C of the center the adjustable display continues, without moving an eye line to right and left. Since concentration to the end of a game person's game is not reduced, and the movement of an eye line is also very small and ends by this, defatigation does not increase. Furthermore, since it is easier to move an eye line caudad for the game person who observes the display in a display window rather than it moves an eye line up, it is easy to attract attention of a display image. Furthermore, a game person observes the display of central reel 4C, watching the screen of a liquid crystal display 6 wishing a cowboy rioting and not being shaken off from a horse at the time of reach. When central reel 4C stops after that Since the picture corresponding to the game result and this game result which a display window displays jumps into a field of view simultaneously from central reel 4C and the liquid crystal display 6 located in the bottom of it, the correspondence relation or sense of togetherness of a display image of the game result of a display window and a liquid crystal display 6 can be directed.

[0049] Moreover, when giving the opportunity of the game which does not need an injection or consumption of a medal for a game person as a service game or a bonus game after rotation of a reel stops, a picture as shown in drawing 4 is displayed on the screen of a liquid crystal display 6 as an omen which tells the start of such a game, and you may make it display the animation following this till the end of the game concerned. If such an omen indication is given, a game person will become the feeling which benefited from the display image of a liquid crystal display 6 by expecting the start of a service game or a bonus game.

[0050] Although the above-mentioned example is equipped with the liquid crystal display as a display means, it can perform the same production as the display image of the above-mentioned example also with the mechanical display suspended and displayed with the arbitrary pictures in two or more pictures like the electric display which arranged many point drops, such as a display unit like CRT, and Light Emitting Diode, instead of or rotation reel structure. [a liquid crystal display] Moreover, you may realize the display image which makes a game state favorable for a game person, or a dangerous state recognize by the abstract display of those other than a character or a picture (for example, blink of a lamp).

[0051] Moreover, although it is made to display the control state of the adjustable display corresponding to the result of an original game on a liquid crystal display 6, you may make it display the picture which can do another game in a liquid crystal display 6 in the above-mentioned example. In this case, the data and the executive program of a display image for another game are stored in ROM22 of a microcomputer 20. And CPU21 performs processing shown in drawing 9 and drawing 10 .

[0052] In drawing 9 , if the power supply of a game machine is turned on [it] first (ST21), CPU as control means will display a "routine pattern" on a liquid crystal display 6 (ST22). If a game person does predetermined operation here (i.e., if the start lever 5 or the spin switch 8 is operated after throwing a medal into medal input port 7 and operating the 1-BET switch 9 or the maximum BET switch 10), Reels 4L, 4C, and 4R will rotate, and an adjustable display will be started (ST23). At this time, it judges winning a prize / un-winning a prize based on the random number extracted by random number sampling (ST24). And the point of judging whether the "winning-a-prize request signal" having occurred (ST25), and determining the display mode of winning a prize or not winning a prize, according to the judgment result is the same as that of processing of drawing 3 .

[0053] However, in processing of drawing 9 , the display image of a liquid crystal display 6 is the pattern which can perform two or more games as another game. Namely, if the "winning-a-prize request signal" has not occurred in the judgment of the above ST 25, CPU "Game 1" when the pattern of ** is chosen (ST26) and a "winning-a-prize request signal" occurs It judges whether a "winning-a-prize request signal" corresponds to "great success" (ST27), if it is "NO", the pattern for "games 2" will be chosen (ST28), and if it is "YES", the pattern for "games 3" will be chosen (ST29). As "a game 1", "a game 2", and "a game 3", although the pattern which appears in a display 6 is the same, things different, respectively, such as a game from which winning-a-prize probability differs, or a game from which the appearing pattern and winning-a-prize probability differ, are set up beforehand.

[0054] Next, it judges whether the conditions which start the game chosen as mentioned above were ready (ST30). As a start condition, arbitrary things, such as a halt of one reel, a halt of two reels, a halt of all reels, and predetermined-time progress, are defined beforehand, for example. When a start condition is except "a halt of all reels", the game by the display of a liquid crystal display 6 will be started during rotation of a reel, and an original game and another game in a liquid crystal display 6 will be performed simultaneously.

[0055] When a start condition is ready in the above-mentioned judgment, as shown in drawing 10 , processing for displaying the selected pattern for games on the screen of a liquid crystal display 6 is performed (ST31), and the game by it is performed. And the winning-a-prize judging of this game is performed (ST32). Although judgment of winning a prize by random number sampling or not winning a prize, and the judgment of the kind of winning a prize are sufficient as this winning-a-prize judging like an original game, it may prepare a winning-a-prize judging special for this game.

[0056] When judged with winning a prize, winning-a-prize processing is performed (ST33). or [that this displays a specific winning-a-prize mode on a liquid crystal display 6, and also is the same as processing when the specific pattern of Reels 4L, 4C, and 4R is equal to the winning-a-prize line 14 as mentioned above] -- or any of the processing separately determined as it are sufficient On the other hand, when judged with un-winning a prize, processing in which a prize is not won is performed (ST34). That is, the specific mode non-winning a prize is displayed on a liquid crystal display 6. Then, about the reels 4L, 4C, and 4R under rotation, halt control is performed (ST35) and it ends.

[0057] Drawing 11 shows the example of the display image of another game performed by the liquid crystal display 6 in relation to the game by Reels 4L, 4C, and 4R. In this example, the picture of three move symbol trains 6L, 6C, and 6R which perform the adjustable display of two or more kinds of patterns like three reels 4L, 4C, and 4R which perform the adjustable display of an original game is displayed on the screen of a liquid crystal display 6.

[0058] Another game of this example is the case of the "bonus game" started when the pattern located in a line along with the winning-a-prize line 14 when rotation of Reels 4L, 4C, and 4R stopped gathers in a specific winning-a-prize mode. At this time, the medal of predetermined number of sheets pays out a game person as profits beforehand defined corresponding to the mode of the winning a prize. And by the start of a "bonus game", an adjustable indication of the three symbol trains 6L, 6C, and 6R is given at the screen of a liquid crystal display 6, and when predetermined-time progress is carried out, movement of each symbol trains 6L, 6C, and 6R stops. If a specific symbol "DOUBLE" is located on central line 14' at this time, the medal of predetermined number of sheets will pay out a game person again. Therefore, the opportunity for the profits gained by winning a prize of an original game to double by the "bonus game" is given to a game person.

[0059] By moreover, the case of the "lottery game" started when the pattern located in a line along with the winning-a-prize line 14 as other examples of another game when rotation of Reels 4L, 4C, and 4R stopped gathers in a specific winning-a-prize mode The symbol (number) located on central line 14' when three symbol trains 6L, 6C, and 6R which indicate by adjustable stop on the screen of a liquid crystal display 6 expresses distribution of profits to the above-mentioned "bonus game" said appearance, without defining distribution of profits beforehand corresponding to the winning-a-prize mode. The medal of predetermined number of sheets pays out by the distribution of profits for which it opted.

[0060] Although the display image for the display of the adjustable display-control state of an original game or another game is displayed on the liquid crystal display 6 of an example of the display means in this invention as above, you may display the picture which shows the number of times of generating or the incidence rate of winning a prize or HAZURE in the history of the past game result, i.e., the already digested game, besides these displays. For this reason, if a display change button is prepared in the place (for example, side side of a liquid crystal display 6) where the transverse plane of the slot machine of drawing 1 is suitable and a game person pushes this at the arbitrary times in a game, the screen of a liquid crystal display 6 will be changed to winning a prize, or the number of times of generating of HAZURE or the display of an incidence rate, and when a game person pushes a button again, it is made to return to a front screen. By the above-mentioned history display, a game person can judge whether it is the base out of which a hit of the game machine which is going to begin a game tends to come.

[0061] Digital display can be carried out in a number as carries out the analog display of winning a prize for example, after a game start, or the survival rate (for example, winning a prize assumed to generate in 10,000 times of games or % of the number of times of HAZURE) of HAZURE with a bar graph as shown in drawing 12 and drawing 13 , and a pie chart as shown in drawing 14 or shows it to drawing 15 as a picture which shows such a game history. The operation for these displays is performed by the microcomputer of a slot machine 1, or CPU (in a certain case) of liquid-crystal-display 6 the very thing.

[0062] In detail, in the example of drawing 12 , "7", "BAR", a "bell" (figure), and a "cherry" (figure) are shown as a pattern (symbol) which constitutes the pattern combination of winning a prize, and each survival rate is displayed on the screen of a liquid crystal display 6 about these patterns and other patterns (symbol used as "HAZURE"). As a pattern "7" is shown in drawing 13 as an example, the bar graph showing the survival rate (%) for every pattern at the power up of a slot machine 1, or the time of reset lighting or the portion displayed brightly -- 100% of state -- it is (drawing 13 A) -- While the game is repeated, whenever the state of "7-7-7" of being becoming it a great success arises [the pattern combination at the time of a halt of three rotation reels 4L, 4C, and 4R], lighting or the bright portion decreases by a unit of 10% (drawing 13 B-D). moreover, lighting which expresses the survival rate (%) for every pattern also with the pie chart of drawing 14 or an emphasis portion -- great success -- being generated -- whenever -- decreasing . The same is said of other patterns. In the digital display of drawing 15 , the number which expresses a survival rate (%) for every pattern changes.

[0063] Moreover, arrangement of the liquid crystal display 6 of an example of a display means may prepare in the bottom whole region of display windows 3L, 3C, and 3R, the right-hand side left-hand side display window 3L or display window 3R bottom, etc., as shown not only in the display window 3C bottom like drawing 1 but in drawing 16 .

[0064] Moreover, you may be a game machine possessing the adjustable display with which three or more patterns are displayed on each display window, and two or more winning-a-prize lines become effective under predetermined conditions.

[Translation done.]

* NOTICES *
Japan Patent Office is not responsible for any damages caused by the use of this translation.
1.This document has been translated by computer. So the translation may not reflect the original precisely.
2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]
[Drawing 1] The perspective diagram showing the appearance of the slot machine of the example of this invention.
[Drawing 2] The block diagram showing the circuitry used for the slot machine of drawing 1 .
[Drawing 3] The flow chart which shows a part of control action of an example.
[Drawing 4] Drawing showing the example of the display state before the adjustable display start of an example, and the display image of a liquid crystal display.
[Drawing 5] Drawing showing the display state after an adjustable display start, and the display image of a liquid crystal display.
[Drawing 6] Drawing in which an adjustable display displays a reach state and shows the display image of the liquid crystal display at that time.
[Drawing 7] Drawing in which displaying the pattern which an adjustable display is turned off and serves as "HAZURE", and showing the display image of the liquid crystal display at that time.
[Drawing 8] Drawing in which displaying the pattern which an adjustable display is turned off and is "becoming it a great success", and showing the display image of the liquid crystal display at that time.
[Drawing 9] The flow chart which shows the procedure in the case of displaying another game on the liquid crystal display of an example.
[Drawing 10] The flow chart following drawing 9 .
[Drawing 11] Drawing showing the example of the display image of another game performed by the liquid crystal display of an example.
[Drawing 12] Drawing showing the state of displaying the survival rate of each pattern by the bar graph by the liquid crystal display of an example.
[Drawing 13] Drawing showing the example of change of a bar graph display about one pattern of drawing 12 .
[Drawing 14] Drawing showing the case where the survival rate of one pattern is displayed with a pie chart.
[Drawing 15] Drawing showing the state where the survival rate of each pattern is numerically displayed by the liquid crystal display of an example.
[Drawing 16] The perspective diagram showing the appearance of the slot machine of another example of this invention.
[Description of Notations]
1 [-- Display window,] -- A slot machine, 2 -- A cabinet, 3L, 3C, 3R 4L, 4C, 4R [-- Liquid crystal display,] -- A reel, 5 -- A start lever, 6 7 [-- 1-BET switches 9 and 10 / -- Maximum BET switch,] -- Medal input port, 8 -- A spin switch, 9 11 [-- Medal receptacle section,] -- A C/P switch, 12 -- A medal expenditure mouth, 13 14 -- A winning-a-prize line, 15L, 15C, 15R -- Stepping motor, 16 [--

CPU, 22 / -- ROM,] -- A liquid crystal drive circuit, 20 -- A microcomputer, 21 23 [-- A counting-down circuit, 26 / .... A random number generator, 27 / -- A random number sampling circuit, 30 / -- A hopper, 31 / -- A motorised circuit, 32 / -- A hopper drive circuit, 34 / -- A reel position detector, 35 / -- A medal detecting element, 36 / -- The completion signal circuit of expenditure.] -- RAM, 24 -- A clock pulse generating circuit, 25

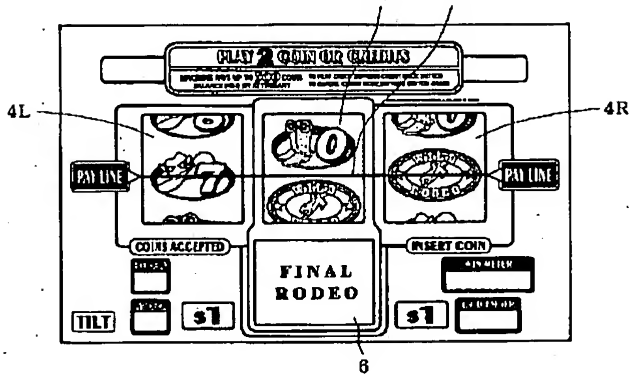
[Translation done.]

* NOTICES *
Japan Patent Office is not responsible for any
damages caused by the use of this translation.
1.This document has been translated by computer. So the translation may not reflect the original precisely.
2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

DRAWINGS

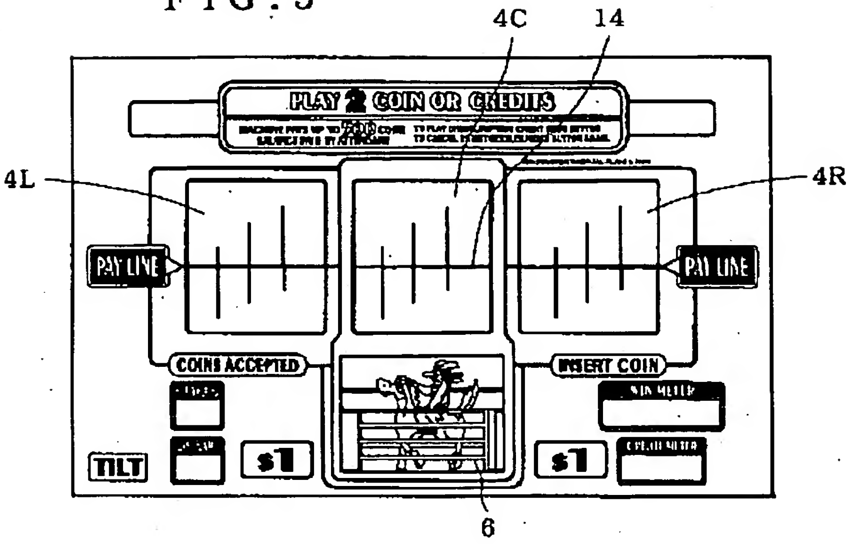
[Drawing 4]

FIG.4


4C
14
PLAY 2 COIN OR CREDITS
4L
4R
PAY LINE
PAY LINE
COINS ACCEPTED
INSERT COIN
FINAL
RODEO
TILT
$1
$1
6

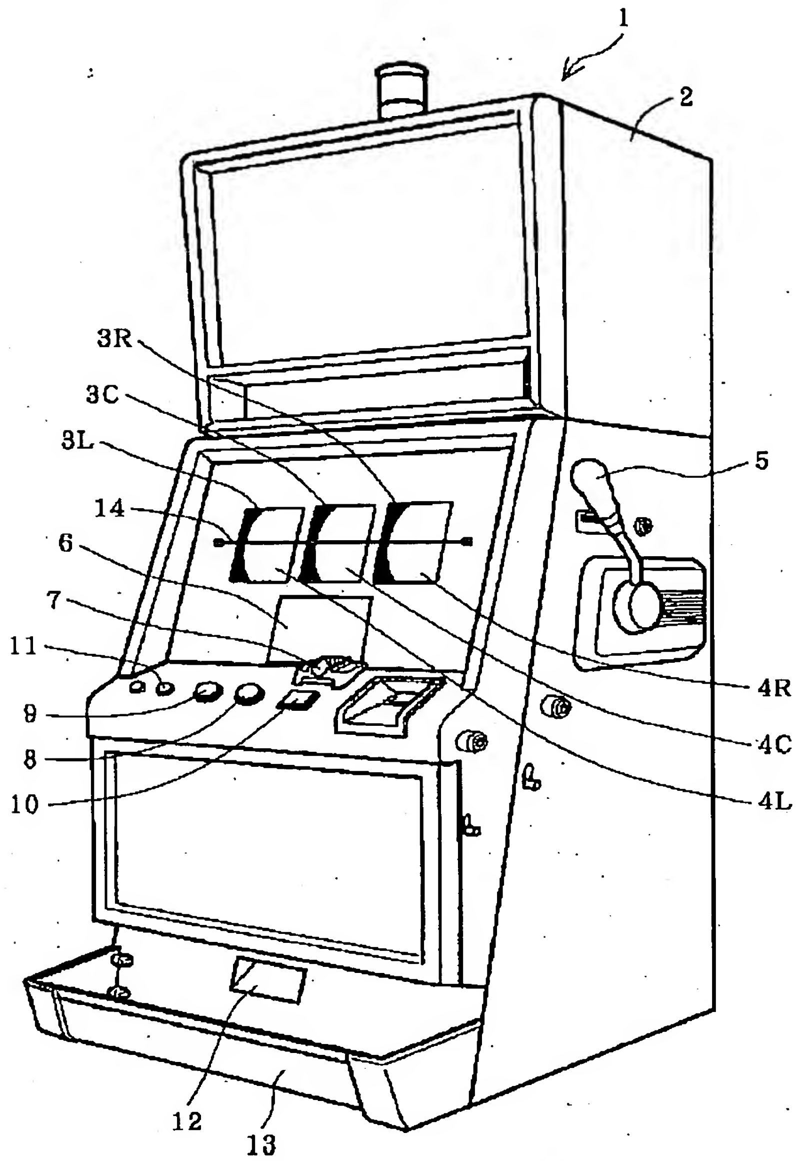
[Drawing 5]

FIG.5


4C
14
4L
4R
PLAY 2 COIN OR CREDITS
PAY LINE
PAY LINE
COINS ACCEPTED
INSERT COIN
WIN METER
CREDIT METER
TILT
$1
$1
6

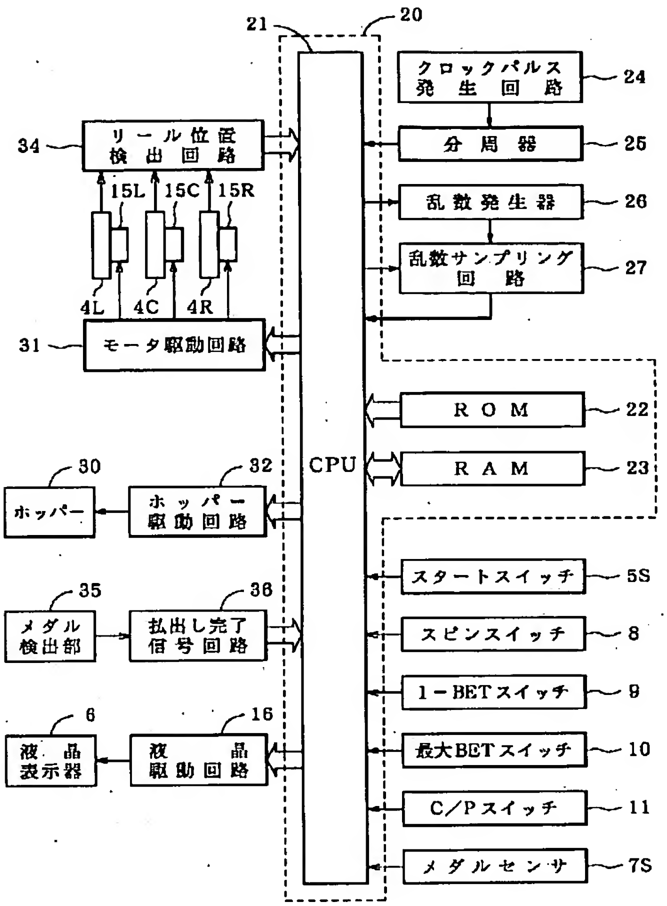
[Drawing 1]

FIG. 1


1
2
3R
3C
3L
14
6
7
11
9
8
10
5
4R
4C
4L
12
13

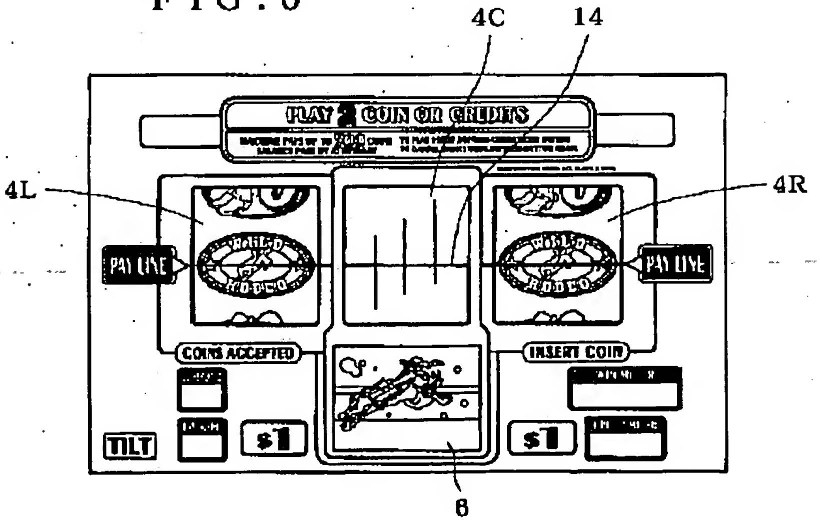
[Drawing 2]

F I G . 2


20
21
クロックパルス発生回路
24
分周器
25
乱数発生器
26
乱数サンプリング回路
27
リール位置検出回路
34
15L
15C
15R
4L
4C
4R
モータ駆動回路
31
ROM
22
CPU
RAM
23
30
ホッパー
32
ホッパー駆動回路
35
メダル検出部
36
払出し完了信号回路
6
液晶表示器
16
液晶駆動回路
スタートスイッチ
5S
スピンスイッチ
8
1－BETスイッチ
9
最大BETスイッチ
10
C／Pスイッチ
11
メダルセンサ
7S

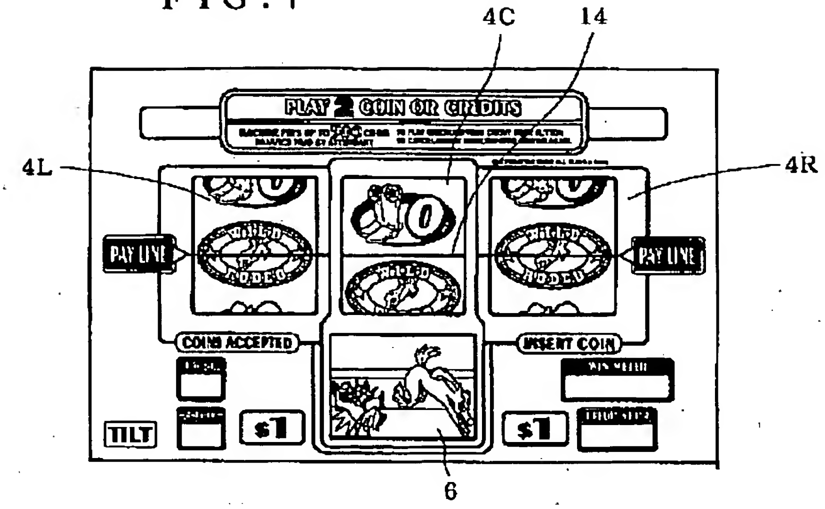
[Drawing 6]

F I G . 6


4C
14
PLAY 2 COIN OR CREDITS
4L
4R
PAY LINE
WORLD RODEO
PAY LINE
COINS ACCEPTED
INSERT COIN
TILT
$1
$1
6

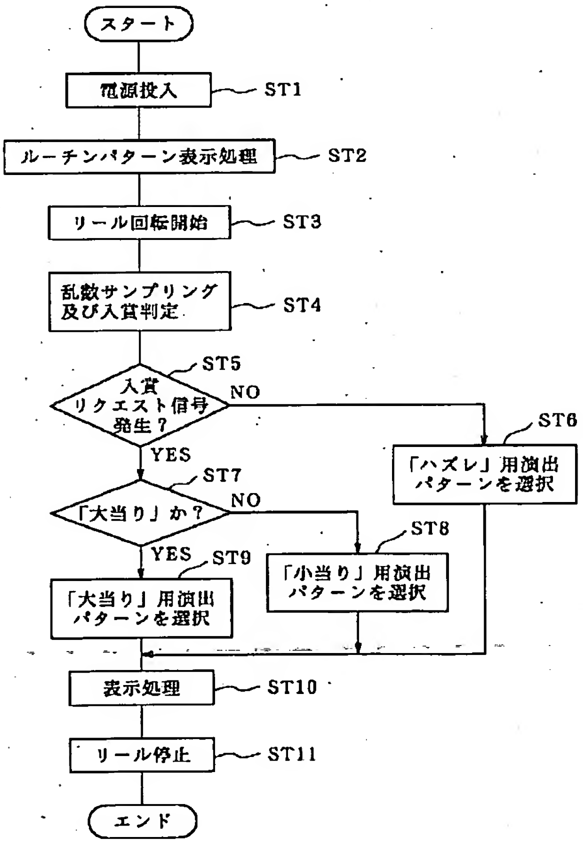
[Drawing 7]

F I G . 7


4C
14
4L
4R
PLAY 2 COIN OR CREDITS
PAY LINE
PAY LINE
COINS ACCEPTED
INSERT COIN
TILT
$1
$1
6

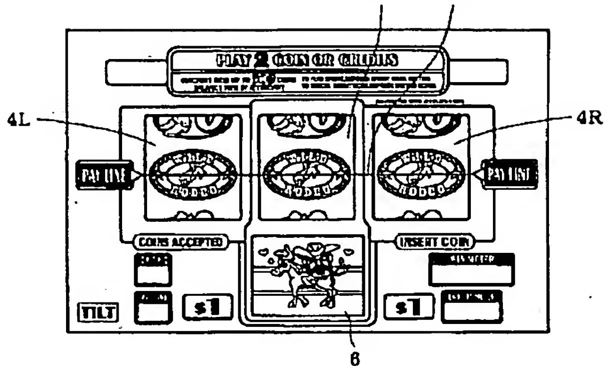
[Drawing 3]

F I G . 3


スタート
電源投入
ST1
ルーチンパターン表示処理
ST2
リール回転開始
ST3
乱数サンプリング及び入賞判定
ST4
ST5
入賞リクエスト信号発生？
NO
YES
ST6
「ハズレ」用演出パターンを選択
ST7
「大当り」か？
NO
YES
ST8
「小当り」用演出パターンを選択
ST9
「大当り」用演出パターンを選択
表示処理
ST10
リール停止
ST11
エンド

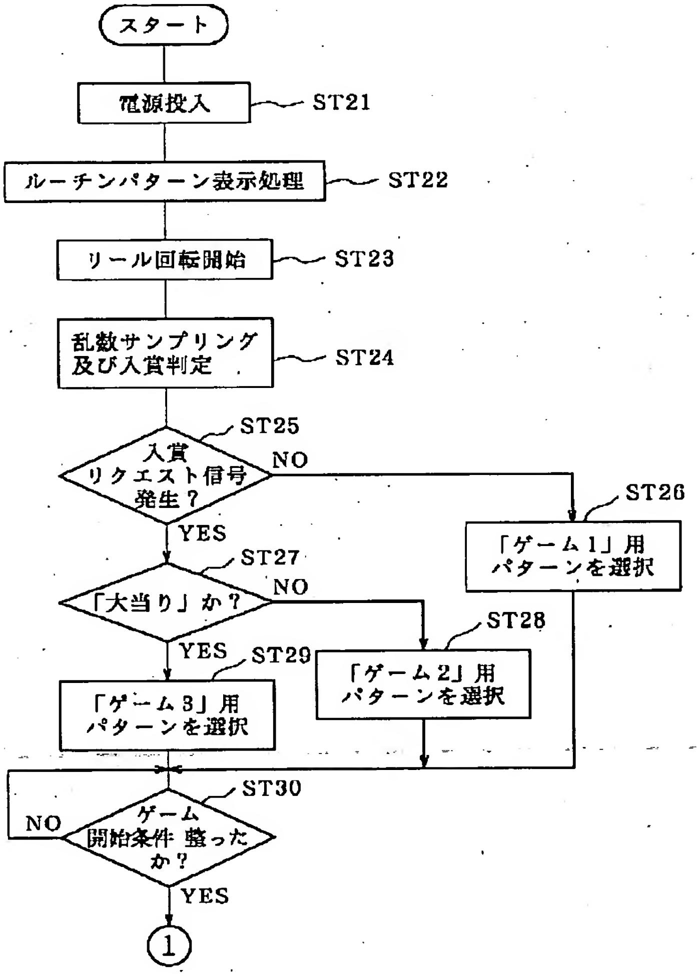
[Drawing 8]

FIG.8


4C
14
PLAY 2 COIN OR CREDITS
4L
4R
PAY LINE
PAY LINE
COINS ACCEPTED
INSERT COIN
TILT
$1
$1
6

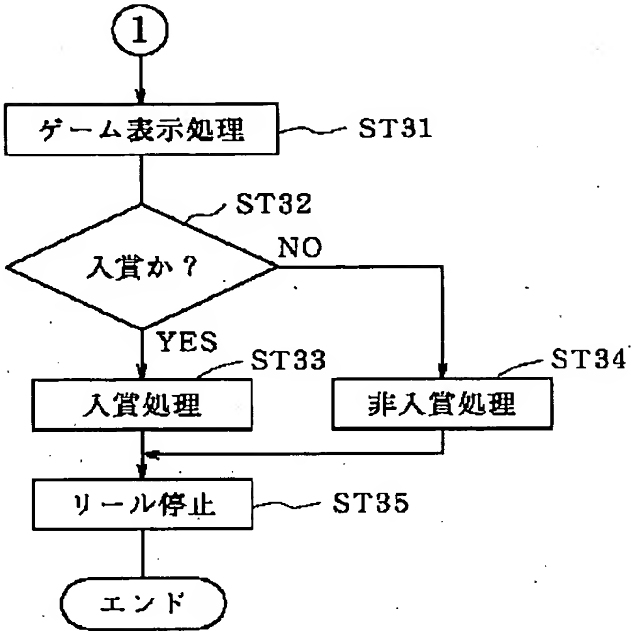
[Drawing 9]

FIG.9


スタート
電源投入
ST21
ルーチンパターン表示処理
ST22
リール回転開始
ST23
乱数サンプリング及び入賞判定
ST24
ST25
入賞リクエスト信号発生？
NO
ST26
「ゲーム1」用パターンを選択
YES
ST27
「大当り」か？
NO
ST28
「ゲーム2」用パターンを選択
YES
ST29
「ゲーム3」用パターンを選択
ST30
NO
ゲーム開始条件 整ったか？
YES
1

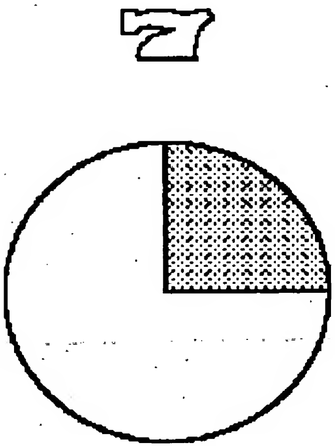
[Drawing 10]

FIG.10


①
ゲーム表示処理
ST31
ST32
入賞か？
NO
YES
ST33
ST34
入賞処理
非入賞処理
リール停止
ST35
エンド

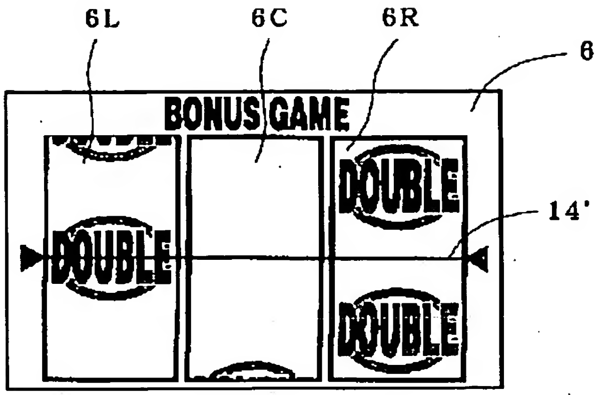
[Drawing 14]

FIG.14



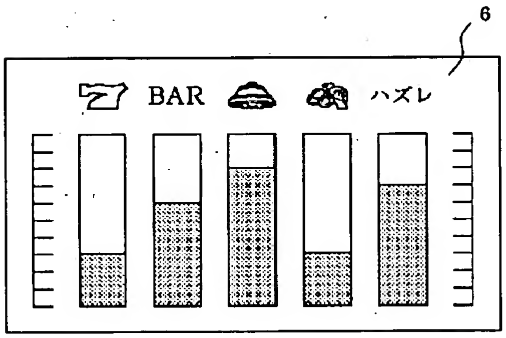
[Drawing 11]

FIG.11


6L
6C
6R
6
BONUS GAME
DOUBLE
DOUBLE
DOUBLE
14'

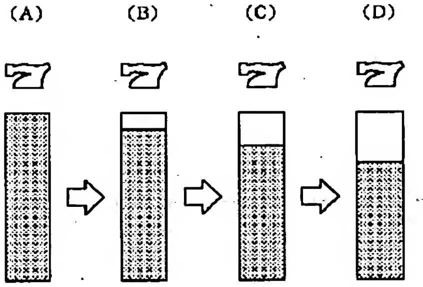
[Drawing 12]

FIG.12



[Drawing 13]

FIG.13



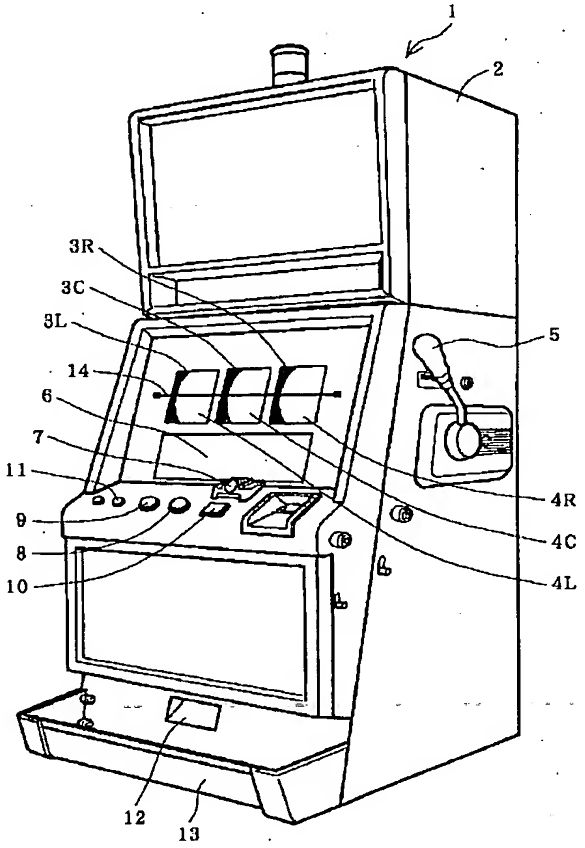
[Drawing 15]

F I G . 1 5

7	BAR	🔔	🍒	ハズレ
20	50	15	30	40

[Drawing 16]

F I G . 1 6


1
2
3R
3C
3L
14
6
7
11
9
8
10
5
4R
4C
4L
12
13

[Translation done.]